

In the claims:

1. (currently amended) A method of optimization of adjustable parameters of at least one machine, comprising the following steps:

providing a data processing system, wherein the data processing system is a diagnosis system;

optimizing adjustable parameters by processing of at least one process algorithm provided in the data processing system;

selecting the process algorithm to be processed from a plurality of process algorithms; ~~and~~

proposing or automatically selecting a process algorithm by the data processing system depending on data selected from the group consisting of machine-internal data, machine-external data, and target data, ~~wherein~~;

using an adjustable parameter to be optimized, a further parameter and an internal expert knowledge ~~are used~~ as the machine internal data;

defining situation patterns for the process algorithms by at least a part of data selected from the group consisting of machine-internal data, machine-external data, target data and combinations thereof;

selecting a situation pattern which comes close or is identical to an instantaneous situation pattern and a process algorithm linked to the situation pattern, depending on the at least one part of the machine-interior data and machine-exterior data with consideration of the target data which defines at least a part of an instantaneous situation pattern;

processing the machine-internal data and machine-external data by the data processing system in consideration of the target data; and generating further-processable output data; obtaining optimized adjustable parameters; and using the optimized adjustable parameters for indication to an operator or for adjustment of the at least one machine.

2. (previously presented) A method as defined in claim 1; and further comprising the step of determining the optimization of the adjustable parameters by target data selected from the group consisting of editable target data and storable target data.

data.

Claims 3-4 cancelled.

5. (previously presented) A method as defined in claim 1; and further comprising the steps of editing and storing the machine-internal data, the machine-external data and the output data by the data processing system.

6. (previously presented) A method as defined in claim 1; and further comprising the step of operating the data processing system in a time controlled manner.

Claim 7 cancelled.

8. (previously presented) A method as defined in claim 1; and further comprising the step of using a traveling speed, a rotary speed of at least one threshing drum and/or the rotary speed of a blower of at least one cleaning device as the adjustable parameters to be optimized.

9. (previously presented) A method as defined in claim 1; and further comprising the step of using a crop-specific and/or machine-specific parameter as the further parameter; and performing the determination of the further parameter by sensors which are in operative communication with the machine or by inputting.

10. (previously presented) A method as defined in claim 9; and further comprising the step of using a parameter selected from the group consisting of a grain loss, a grain throughput, a crop moisture, a crop total throughput and a broken corn portion as the further parameter.

11. (previously presented) A method as defined in claim 9; and further comprising the step of using adjustment regions for parameters of working units of the machine as the further parameter.

12. (previously presented) A method as defined in claim 5; and further comprising the steps of generating the machine-external data by external systems and using plant-specific data, geographic data, weather data and/or external expert knowledge as the machine external data.

13. (previously presented) A method as defined in claim 12; and further comprising the step of using crop and/or data and experience knowledge as the external expert knowledge and as internal expert knowledge.

14. (previously presented) A method as defined in claim 1; and further comprising the step of processing a diagnosis selected from the group consisting of process diagnosis, case diagnosis, and model-oriented diagnosis with the at least one process algorithm of the data processing device .

Claims 15-17 cancelled.

18. (previously presented) A method as defined in claim 1; and further comprising the step of generating changed process algorithms by the data processing system depending on machine-interior data and machine-exterior data and with consideration of changeable target data.

19. (previously presented) A method as defined in claim 1; and further comprising the step of generating changed situation patterns by the data processing

system in dependence on machine-interior data and machine-exterior data and with consideration of changeable target data.

20. (previously presented) A method as defined in claim 1; and further comprising the step of storing process algorithms, situation patterns or both in data sets, wherein the data sets include at least a part of machine-internal data, machine-external data and target data.

21. (previously presented) A method as defined in claim 1; and further comprising the step of incorporating in data processing system situation patterns and associated process algorithms and/or optimized adjustable parameters to be available for further machines.

22. (previously presented) A method as defined in claim 1, wherein the machine is an agricultural harvester; and further comprising the step of determining at least one process algorithm depending on harvesting conditions of the agricultural harvester.

23. (previously presented) A method as defined in claim 1; and further comprising the step of adapting the processing algorithm by analysis and evaluation.